

Patent claims

1. An implant (5) which can be fitted in an implantation site in a hole (4) formed in a jaw bone (1) where it is exposed to an impinging force or impinging forces (F1, F2), and which comprises one or more peripherally extending surfaces which are arranged at its upper/outer portion and which can be placed against a jaw bone part at the outlet opening (4b) of the hole, characterized in that each surface is provided with a pattern (8) of grooves (10) and/or recesses, and in that a considerable number, for example 20% or more, of the grooves and/or recesses are designed so that, in the implantation site, they extend substantially at right angles to, and if appropriate parallel to, said forces when these assume principal directions differing from the longitudinal direction (5c) of the implant.
2. The implant as claimed in patent claim 1, characterized in that the grooves (10) and/or recesses are closed, i.e. have no connection to the upper and/or lower parts (9d, 9e) of the portion, and thus prevent passage of bacteria and/or organisms (13) from the upper parts to the lower or inner parts of the implant.
3. The implant as claimed in patent claim 1 or 2, characterized in that the grooves (10) and/or recesses have a depth (D) which lies in the range of 50 - 100 μm , and is preferably ca. 70 μm , in order in this way to stimulate growth of bone or osteoconduction.
4. The implant as claimed in patent claim 1, 2 or 3, characterized in that the grooves and/or recesses have a width (B) in the range of 100 - 150 μm ,

- 11 -

preferably ca. 110 μm .

5. The implant as claimed in patent claim 1, 2, 3 or 4, characterized in that the upper/outer portion has an inner socket (20) which is polygonal, toothed or with two or more wings, and the grooves and/or the recesses are arranged at parts (17b, 17c) of greater material thickness at the upper/outer portion.
- 10
6. The implant as claimed in any of the preceding patent claims, characterized in that the pattern comprises straight and parallel groove parts (16a, 16a') with at least two directions of inclination and are arranged round all or part of the peripheral surface, and in that the groove parts extend 10 - 45° in relation to a cross section through the surface.
- 15
- 20 7. The implant as claimed in any of patent claims 1 - 5, characterized in that the pattern comprises sinusoidal groove and/or recess parts (18b, 18c, 18d).
- 25 8. The implant as claimed in any of patent claims 1 - 5, characterized in that the pattern comprises one or more groups of grooves (18d) arranged mutually parallel and with different longitudinal extents.
- 30 9. The implant as claimed in any of the preceding patent claims, characterized in that the peripherally extending surfaces (14a) are formed on a flange arrangement.
- 35 10. The implant as claimed in any of the preceding patent claims, characterized in that the principal direction of the impinging force or forces (F3) is for the most part oblique in relation to the longitudinal direction (5c') of the fitted

- 12 -

implant, because the implant assumes an inclined position in the hole formed in the jaw bone.

11. The implant as claimed in any of patent claims 1 - 5, characterized in that the principal direction of the impinging force or forces (F1, F2) is for the most part oblique in relation to the fitted implant, because of the oblique settings of impinging force or forces in the implantation 10 environment (cf. chewing movements):
12. The implant as claimed in any of the preceding patent claims, characterized in that its groove or recess pattern is unique for a first implant 15 design which differs in respect of this pattern from a second implant design.
13. The implant as claimed in any of the preceding patent claims, characterized in that the implant 20 is exposed to forces (F4) with mutually different directions, and in that a first part or parts of the groove and/or recess pattern (16a) is/are substantially at right angles in relation to a first force direction and in that a second part or 25 parts of the pattern is/are substantially at right angles in relation to a second force direction and, if appropriate, so on, if a further force direction or force directions is/are present.
14. The implant as claimed in patent claim 9, 30 characterized in that said flange arrangement (17) is cylindrical.
15. The implant as claimed in patent claim 9, 35 characterized in that said flange arrangement (22) is conical.
16. The implant as claimed in patent claim 9, characterized in that said flange arrangement (21)

- 13 -

is scalloped.